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EXAMINER
WIEKER, AMANDA FLYNN

ART UNIT	PAPER NUMBER
3743	

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	**Application No.** 10/681,224	**Applicant(s)** KARASON ET AL.
	Examiner Amanda F. Wieker	**Art Unit** 3743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 01 August 2005.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-23 is/are pending in the application.

4a) Of the above claim(s) 11,12,20 and 21 is/are withdrawn from consideration.

5)☒ Claim(s) 13-19 is/are allowed.

6)☒ Claim(s) 1-10, 22-23 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 01 August 2005 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 11-12 and 20-21 remain withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 8, 10 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent Number 4,928,678 to Grim.

Regarding claim 1, Grim discloses a casting product for forming a hard structure about an object comprising: a flexible fibrous substrate (Figure 4- 24; Figure 12- 554) impregnated with a fluid-activated resin; and a protective flexible casing (Figure 4- 18; Figure 12- 544) surrounding said impregnated substrate and configured to permit a vacuum or near vacuum environment therein; wherein the casing defines a tubular sealable passageway (Figure 4- 26; Figure 12- 534, 532) located between the atmosphere and the interior of said casing, said passageway enabling injection and removal of fluid from said casing to permit activation of said resin. The sealable passageway is located on a side portion of the casing (top side as shown, however, capable of being located on any side, per the position of the product).

Regarding claim 2, the casting product further comprises a generally hydrophobic permeable "breather" substrate (Figure 12- 558, 557; for example, fiberglass or KEVLAR®)

disposed in said casing and positioned along at least one surface of said impregnated substrate, in generally laminar relationship therewith.

Regarding claim 3, the passageway includes a sealable tube portion extending from said casing, an open end of said tube portion configured to couple with a fluid injection device (see column 5, "water may be injected into the pouch through water inlet 26").

Regarding claim 8, the casting product further comprises a padding layer (Figure 4- 16; Figure 12- 546) surrounding said impregnated substrate.

Regarding claim 10, the casing (Figure 4- 18; Figure 12- 544) is at least substantially moisture-impervious.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 4 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grim.

Grim discloses the previously described casting product for forming a hard structure about an object. Grim specifies that the product include a substrate impregnated with a fluid-activated resin, such that the product hardens upon exposure to fluid. Grim specifies that fluid be provided to the substrate via injection of fluid through a passageway (Figure 4- 26; Figure 12- 534). Grim does not specify that the fluid injector comprise tube with a plurality of apertures to "distribute water across the substrate" (see specification, paragraph bridging pages 8-9).

However, Grim discloses a perforated layer (Figure 4- 22; Figure 12- 552) provided immediately below the injection passageway, to evenly distribute fluid injected from a syringe across the resin-impregnated substrate. It appears that the combination of the syringe and perforated sheet disclosed by Grim performs the same function as the perforated injector claimed by Applicant, wherein the syringe is inserted through the passageway into the casing, to inject the fluid and distribute that fluid across the substrate.

Therefore, it would have been obvious to one skilled in the art to have provided the casting product disclosed by Grim, wherein the activating fluid is supplied to the resin-impregnated substrate by a perforated fluid injector, a combined perforated sheet and injector, or any other device which performs the required function or evenly distributing fluid across the substrate surface.

6. Claims 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grim in view of U.S. Patent Number 4,537,184 to Williams, Jr.

Grim discloses the previously described casting product for forming a hard structure about an object. Grim specifies that the product include a substrate impregnated with a fluid-activated resin, such that the product hardens upon exposure to fluid. Grim does not specify that the casting product include a moisture impervious, rupturable pack containing the activating fluid, or a heat insulator.

Williams, Jr. discloses a casting product comprising a substrate (14) impregnated with a fluid-activated resin, surrounded by a casing (12). The casing further encloses a moisture impervious, rupturable pouch containing a fluid, such that the fluid activates the resin-impregnated substrate when the pouch is ruptured. Williams, Jr. specifies that the enclosed rupturable pouch make activation of the product easy to use by non-medical personnel.

Williams, Jr. further discloses a heat isolator (18) positioned along the inner surface of the casing to protect the user from burns due to the heat released during the activation of the product (see column 2, lines 53-60).

It would have been obvious to one skilled in the art at the time the invention was made to have provided the casting product disclosed by Grim, wherein the fluid-impregnated resin is activated by a rupturable pouch containing fluid and wherein the casing includes a heat isolator, as taught by Williams, Jr., to allow easy use of the product by non-medical personnel and to protect the user from burns during the activation of the product.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grim in view of U.S. Patent Number 6,152,892 to Masini.

Grim discloses the previously described casting product for forming a hard structure about an object. Grim specifies that the product include a substrate impregnated with a fluid-activated resin, enclosed in a casing. Grim specifies that the casing be surrounded by a moisture impervious layer (Figure 4- 14; Figure 12- 548), but does not specify that the moisture impervious layer be foil.

Masini discloses a casting product comprising a substrate impregnated with a fluid-activated resin, enclosed in a moisture impervious material. Masini specifies that the moisture impervious material be foil, because it can protect against the intrusion of moisture indefinitely.

It would have been obvious to one skilled in the art to have provided the casting product disclosed by Grim, wherein the moisture impervious layer surrounding the casing be foil, as taught by Masini, to allow protection against the intrusion of moisture for extensive periods of time.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grim in view of U.S. Patent Number 6,881,486 to Sendijarevic.

Grim discloses the previously described casting product for forming a hard structure about an object. Grim specifies that the product include a substrate impregnated with a fluid-activated resin, enclosed in a casing. Grim specifies that the casting product further include a breather substrate (558; fiberglass, for example). Grim does not specify that release film be disposed between the breather substrate and the impregnated substrate.

Sendijarevic discloses a casting product comprising multiple layers of fluid-activated resin impregnated substrate. Sendijarevic specifies that release film (42) be used to separate the layers.

It would have been obvious to one skilled in the art to have provided the casting product disclosed by Grim, wherein the breather substrate and impregnated substrate be separated by a release film, as taught by Sendijarevic, to allow separation of the layers.

Allowable Subject Matter

9. Claims 13-19 are allowed.

10. The following is an examiner's statement of reasons for allowance: The relevant prior art does not disclose or fairly suggest a vacuum used to remove excess fluid from the casting product, after such fluid is used to activate the resin.

Response to Arguments

11. Applicant's arguments filed 01 August 2005 have been fully considered but they are not persuasive.

12. On page 14 of the Remarks, Applicant argues that the Grim patent fails to disclose a casing that defines a tubular, sealable passageway, because port 26 is an element separated from the casing.

The examiner disagrees with this characterization. Grim discloses a "tubular sealable, passageway located between the atmosphere and the interior of the casing," in the form of inlet tubes (26 and 534) that communicate from the outside atmosphere to the interior of the casing (18, 544). Despite the fact that these tubes appear to be accommodated in a hole in the casing, these tubes meet the claim limitation, as broadly considered. Further, Applicant's own specification and drawings support this interpretation of the claims. As seen in Figures 1, 6 and 7, Applicant's own passageway appears to be a tubular element accommodated in a hole in the casing. In addition, as seen on pages 7-8 of the specification, Applicant defines the passageway as "any suitable means configured to permit the introduction of water".

The examiner is unclear if Applicant is attempting to argue that the passageway and casing are a unitary element. If so, the subject limitation of claim 1 reciting "the casing ~~includes~~ defines a tubular, sealable passageway" would constitute new matter, as such a limitation or reading is not supported by the originally filed specification. There is no support in the specification to support a limitation or interpretation requiring the casing and passageway comprise a unitary element (i.e., casing "defines" a tubular passageway). The claim is not being interpreted as such, because such intent is not abundantly clear from Applicant's Remarks. The examiner requests clarification on this issue.

Therefore, the examiner maintains that the inlet tubes disclosed by Grim meet the claim limitation requiring: "the casing (18, 544) defines a tubular, sealable passageway (26, 534) located between the atmosphere and the interior of the casing."

13. Applicant's arguments with respect to claim 2 have been considered but are moot in view of the new interpretation provided in the rejection. Because this previously recited limitation is rejected differently in this Office Action than the last, this Action is non-final.

14. On page 16 of the Remarks, Applicant argues that the 35 U.S.C. 103 rejections to Grim are improper. Applicant argues that the claimed perforated injection tube does not perform the same function as the perforated sheet, because the perforated sheet does not inject fluid while the perforated injection tube does inject fluid.

It appears that Applicant misunderstood the examiner's rejection, and as such, the rejection has been clarified above. The examiner does not maintain the perforated injection tube and the perforated sheet perform the same function of a water injecting means. The examiner holds the position that the combination of the syringe (disclosed as water injecting means) and the perforated sheet (22, 522) disclosed by Grim perform the identical function as that of the perforated injection tube. Both elements evenly distribute the injected fluid across the resin-impregnated substrate. Further, the syringe disclosed by Grim is inserted through the passageway into the casing, to inject the fluid. Upon injection, the fluid contacts the perforated sheet and is evenly distributed to the substrate, in the same manner as fluid injected from the perforated injection tube is distributed.

15. Therefore, the examiner maintains that it would have been obvious to have provided the casting product disclosed by Grim, wherein the activating fluid is supplied to the resin-impregnated substrate by a perforated fluid injector, a combined perforated sheet and injector, or any other device which performs the required function or evenly distributing fluid across the substrate surface.

16. Applicant has provided no specific arguments for the remaining rejections.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amanda F. Wieker whose telephone number is 571-272-4794. The examiner can normally be reached on Monday-Thursday, 7:30 - 5:00 and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennett can be reached on 571-272-4791. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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